

NYBBLES



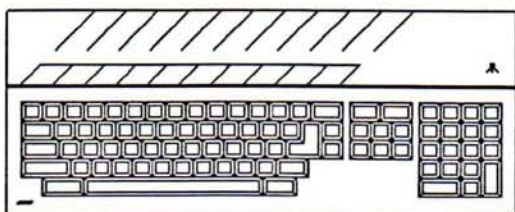
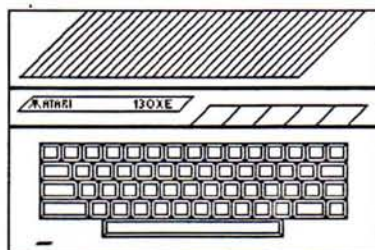
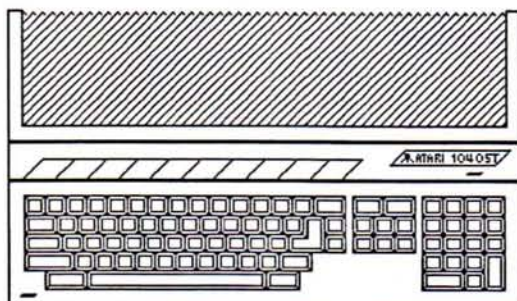
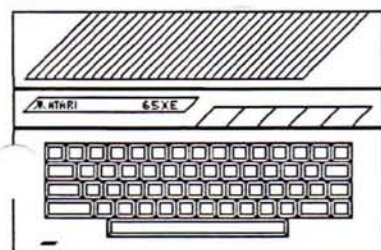
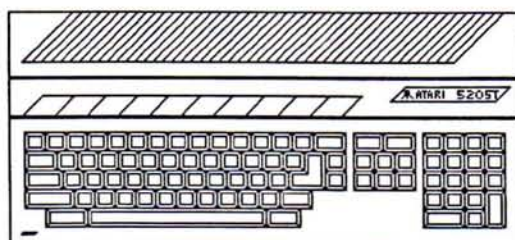
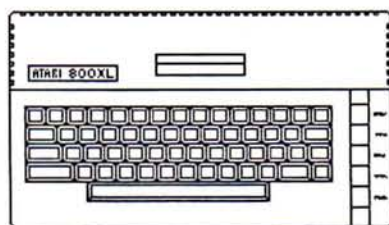
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NOVEMBER 1987

Volume 4 - Number 11

& BYTES

Newsletter of the Combined Atari User Groups



MEMBERS OF THE ATARI FAMILY OF COMPUTERS

The 800XL, 65XE, 130XE, 520ST, 1040ST, & Mega ST

Clip art by David Lindsley

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Happy Thanksgiving!



nw **poc**

N.W. Phoenix Atari Connection

An Independent Users Group

sevilc

SOUTH EAST VALLEY ATARI CONNECTION

NYBBLES & BYTES

This newsletter is written and published monthly by the North West Phoenix Atari Connection (NWPAC) and the SouthEast Valley Atari Connection (SEVAC).

Both groups are non-profit organizations devoted to the exchange of information concerning all Atari computers. Neither NWPAC or SEVAC are affiliated with Atari Inc.

NYBBLES & BYTES welcomes contributions of articles, reviews, and other material related to Atari computer products. See instructions below.

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CLUB BBS

P.A.U.G.S. (Phoenix Atari User Groups)

NWPAC and SEVAC provide a BBS system for its members at 242-4259. The system is operated 24 hours a day, 7 days a week. BBS usage is restricted to club members or on an exchange basis with other user groups. For additional information, call either Bill Smith at 934-9935.



New BBS for uploading articles

The newsletter editor now has a BBS dedicated solely to the uploading of articles, classified ads, reviews, pictures, etc. for use in NYBBLES & BYTES. This will greatly relieve the problems of uploading newsletter items in the past. The BBS is operated only on Friday and Saturday nights from 10 pm to 7 am the following morning. The number is 265-7849.

All text should be in ASCII format. 1st word is suggested for the ST's with the WP mode off. Atari Writer or PaperClip is suggested for the 8-bits.

Pictures, illustrations, etc. can be in either 8 Bit or ST format. However, keep in mind, that since this newsletter is in black & white, certain color pictures will lose clarity in translation. High resolution DEGAS or Graphics 8 pictures will work the best.

Deadline for copy to be included in the following month's issue is the 15th day of each month.

ADVERTISING RATES

Classified ads of a non-commercial nature are free to all current members.

Camera-ready commercial rates are:

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Half Page	\$20.00
Quarter Page	\$10.00
Business Card	\$5.00

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FROM THIS CORNER

By Roger Downey, NWPAC

As I begin to write this, a stack of magazines crowds my computer on the left and a stack of papers has a good rate of growth to my right. The computer desk I built three years ago to hold everything, including magazines, plus provide me with space as a desk has shrunk. I'm maybe two or three magazines away from capacity on the upper shelf (I long ago filled up the bottom shelf under the desk). All of which leads to me to ask: Are those computer ads in magazines for real?

You've seen the ones I mean. A father-type with a satisfied smile is sort of hunched over his son (or a mother-type over her daughter) who is sitting in front of a terminal. First of all, we know the ad's a fake -- the teenager is actually doing *his/her homework* !!! But, look more closely! The computer is set up on the kitchen table. Connect and disconnect that baby a couple of times and watch how often it ends up on the ol' family food holder.

Even more foolish is the absence of computer books, joysticks, magazines, etc., from the close proximity of the keyboard. Things just can't ever be that neat!!!

Space was, is and always *will* be my problem. It must be my "packrat" instinct, but I can't throw away a computer magazine, even one whose feature article

was a program to determine whether a computer has the GTIA chip (For you short-timers, the old Atari 800 did not have an upgraded graphics chip supporting Graphics modes 9, 10 and 11 until 1982). I think I still have at least three or four of the first box of "Elephant" disks I got when I bought my old "800."

I aggravated the situation when I added a printer to my set-up a couple of years ago. Well, once you print that stuff out, you have to save it, don'tcha? People ask me when I'll buy an ST computer. Where would I put it...on the kitchen table?

On another subject, I'm seriously considering a memory upgrade for my 130XE. A few months ago, I saw an ad in a computer magazine for an upgrade which would increase the size of the XE RAMdisk to 256K. It's comparable in size to the RAMBO and the Newell upgrades for the 800XL. I sent away for the flyer mentioned in the ad, but it didn't tell me much. So, I called the company, Electronic Dimensions in San Luis Obispo, California.

The 320K upgrade (64K RAM and 256K RAMdisk) costs \$45 plus \$4 shipping. The fella who answered the phone said that it's a hot item right now, and they're selling plenty. He warned that it should be installed by someone who knows what he's doing. The upgrade

comes with all the memory chips, chip sockets, schematic instructions and software. Electronic Dimensions includes a RAMdisk handler to utilize the extra memory as well as a copy of MYDOS 4.0. SpartaDOS will also work with the upgrade and so will Syn-File +.

The guy at the company asked me if I would be interested in a larger memory installation because they now are selling a 640K upgrade (64K RAM and 576K RAMdisk) for \$70 plus the shipping charge.

I'm still debating whether to do it, but it does sound tempting!!

TIDBITS

Reprinted from the LA-ACE
Journal

You can tell your spending too much time at your computer when...

Your alarm clock goes off and you haven't been to bed yet.

You spend three weeks on a program that only uses 16k of memory, then a friend shows you one that does the same thing in only 15 lines.

Your gosub never returns.

Your wife starts watching football.

You check the calendar to see what season it is.

The cat wants to sleep on the computer because it is the warmest place in the house.

You start to like cold french fries and warm milk.

The folks at the computer store know you by your first name.

A tornado blows the roof off your house, and all you notice is that the light is better.

You start to understand machine code.

Magnets make you nervous.

COMPUTER WORKS

Come see the new
MEGA ST COMPUTERS

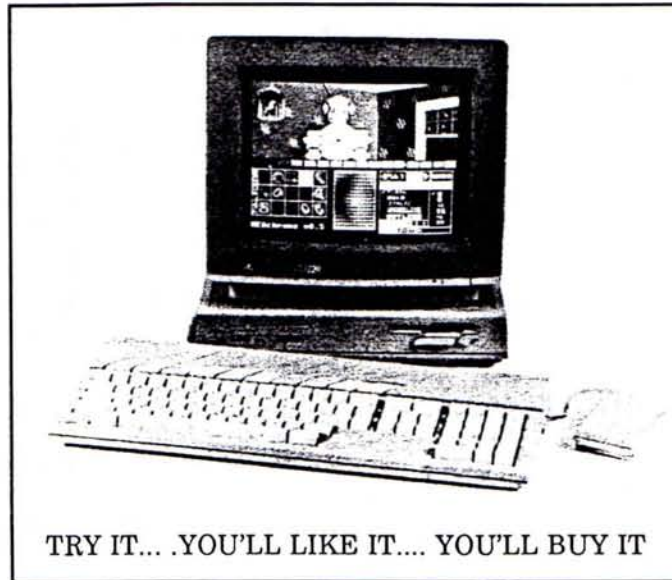
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OF

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OR

1040 ST'S



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BATTLEZONE ST

Reviewed by Dave Thorson, NWPAC

Well, by the time you read this I may have sold my ST version of Battlezone (in the time warp between when I wrote this and now when you're reading it, the Swap meet was next Saturday). I was a bit disappointed when I got a chance to play the game.

Battlezone, a land where you command a lone tank against insurmountable vectorized odds, where you can be shot from behind as if the code of the West never existed, where certain death zips almost peacefully by as you backtrack in a left turn for all you're worth.

Yes, the graphics are well done; close, in fact, to the original arcade classic (whoops, that should be "Classic" with a capital "C"!), even down to the cracked windshield when an incoming missile finds its mark. Don't get me wrong, ST Battlezone is probably a very good game for someone who hasn't played the Atari 2600 version, and I think there's a very good chance that whoever I may have sold it to will enjoy it.

I should be excited about the release of this game, I've waited over three years for it. But I still can't believe the 2600 version, crammed somehow into a 4K cartridge, can outshine a program with a megabyte of ram to roam in! In level one, I shot some tanks and missiles, each of which was fairly predictable. I sunk a few saucers. I scored some points. In level two, more of the same. In fact, I could see no difference between any of the six game levels. The first time on the most challenging (?) level 6, I played for over

twenty minutes before turning off the computer. That was only two hours after I broke the seal on the box! So this is a challenge?

The controls are sluggish (perhaps in an attempt to emulate a "real" tank?) and all the pyramids and boxes strewn about the playfield tend to get in the way more than offer a calm refuge.

Even the feel of the game is slow. In the midst of combat, it seems likely that if you were quick after pressing the fire button, you would have time to boot another game on that tired old 130XE in the corner before the shell leaves the cannon of your tank.

"...this is a challenge?"

The winning strategy seems to be to back up while turning from left to right, pressing the fire button prior to lining up on the target to give the simulated crew (?) time to load a shell into the cannon and send it off. You almost never get hit this way, and you can keep trying until you eventually hit the target. What fun!

I'm making all this sound worse than it probably is, but I thought Atari could easily improve on the 2600 version with all that ST memory and speed waiting to be exercised. In the 2600 version, the game got visibly harder, even presenting up to two enemy tanks and a saucer at the same time. The ST version never sends multiple tanks after you. The 2600 version was very responsive; you could be accurate instead of guessing;

you could say, "Gee, I made a good shot" instead of "Wow. I got lucky again." There were also several strategies to master in the 2600 version, not one. It seems trading fully colored-in tanks for vector graphics has cost a bit of playability.

My conclusions? Try it before you buy it. Friends wonder how I do so well at the 2600 version; perhaps the ST version is what they're looking for. I still love those graphics. They may keep me from selling it....

P.S. I just got back from the (sweltering) swap meet. I didn't even try to sell Battlezone! I did pick up Marble Madness for the ST, and initial impressions are that it doesn't play as well as the arcade game but is still a "must have" for all you M.M. fans out there. The music doesn't play through MIDI, the marbles (yes, two can play at once) are harder to control, there's no way to practice a level without working up to it, each level must be loaded from one of *two* disks each time you get to it, and there's no M.M. Construction Set. These are minor points though, since the game has all the arcade levels, the songs are the same, and it's still a lot of fun, even if not as thrilling (no chills down my spine when the level one song starts, for example, and I don't work up much of a sweat - ah, but those quarters aren't part of the picture now). Electronic Arts doesn't tell you this, but you can hook up a trackball from your 8-bit system instead of a mouse or joystick and get even closer to that Arcade Feel.



1050 / XM301 Modem Fix

(Originally downloaded from)THE PYRAMID BBS

Many have reported having problems when using the Atari XM301/1050 hardware configuration. Thanks to the Status users of Virginia Beach Va., there is an easy hardware fix. Please note that this Fix is NOT an official Atari modification, your warranty will surely be null and void, and it should not be attempted by the nontechnical/nonsoldering type!

PARTS NEEDED:

3 470 ohm resistors

Solder

Soldering iron (15 to 25 watt)

Wire cutters

Small phillips screwdriver

Pieces of small heat shrink

1. Open the XM301's case and remove the PC board assembly.

2. Locate the area where the cable is attached to the board. The wires will be labeled with numbers. Some modems will have these contacts coated with a sealant. Remove the sealant carefully with your fingers, a small knife or screwdriver.

3. Now it gets tricky. De-solder the lines labeled 3,9, &13 and pull the wires through the board. Remember which wire goes into what hole. Might be a good idea to label them with tape. Better safe than sorry.

4. Install each of the 470 ohm resistors into the open holes on the PC board. Push the resistors all the way through leaving them standing straight up.

5. Trim off the excess wire sticking through the PC board and carefully solder the resistors in place. Remember just a little heat will go a long way.

6. If you have some heat shrink tubing, slide it up the end of the wires. Attach the designated wires close to the top of the resistor body. Solder the wires in place and trim off the excess resistor wire.

7. Slide the heat shrink down on the solder joint and carefully 'torch it up'

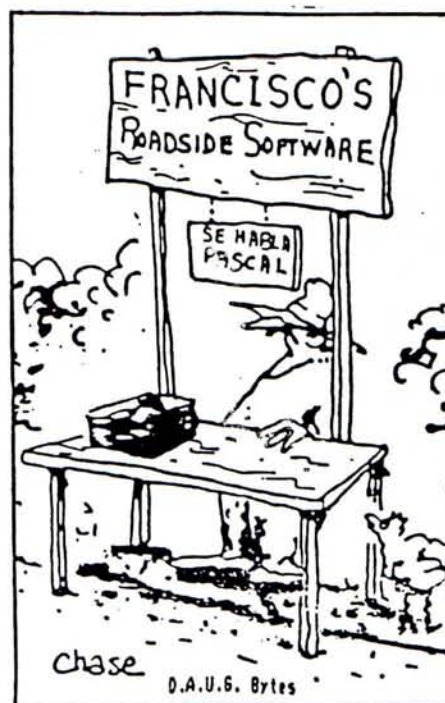
8. Reassemble the PC board back into the case.

FINISHED

Booting up the system all should work as advertised. It's strange that Atari couldn't have done this for you. Funny how things like that happen. Possibly they don't test their peripherals connected as they would be in a system.



IRON MAN



MR. DAVE'S RANDOM BITS

by Dave Thorson, NWPAC

I want to tell you of a nifty trick I discovered while using DO-IT! from QMI. For those who don't remember, DO-IT! is a command shell that does a fairly good job of emulating MS-DOS with some ST features thrown in to keep us all happy for not buying IBM. Do they really think we need an excuse to be happy for not buying IBM? Anyway, I have this problem with ST directory names. There's no way to rename them. There's a time-consuming work-around: copy all the files to the a folder with the desired name, then delete the original files. While waiting, you may have time to load up Battlezone and fire a few shells.... Of course, this gets a bit more complicated if you don't have room for TWO copies of all those files on the disk at the same time.

DO-IT!, and perhaps many other command shells out there, provides a simpler way. Create the new folder as above, then use the rename command to rename all the files from the first folder to the new folder. Folders are just filenames -- they don't physically cordon off a section of your disk and say "Mine!" If you have a folder called STWRITE, and you decide to move all the letter files (*.LTR) into a sub-folder called STWRITE\LETTERS, then issue these commands:

```
CD STWRITE (moves to
STWRITE folder) MD
LETTERS (creates LETTERS
folder) RENAME *.DOC
\STWRITE\LETTERS\*.DOC
Now your files have been
"moved" to the new location. If
```

you moved all the files from one directory to another, you can delete the old directory. Not as simple as the "RENDIR" command in the public domain for MS-DOS machines, but much faster than copying files. The files don't move; only the names are changed to protect the....

Well, here it is, soapbox time. You're lucky I've already written too much for this month 'cause I thought I was going to need a ladder to climb up the box this time! This month's ranting and raving is aimed at all you music lovers out there. Anyone into MIDI has probably heard of DAT (Digital Audio Tape) recorders. They're the ideal tool for a musician since they permit overdubs and cross mixing with no loss in signal quality. Digital in, digital out, no Dolby or DBX required! They could bring out the Mike Oldfield in all of us. DAT recorders are also ideal for capturing albums you own, and even compact disks for party tapes, mood music, or blasting through your car stereo. You might even be able to make a decent sounding demo tape to send to your favorite record label. The tapes will play back with their original sound quality.

That's where a group called the Coalition to Save America's Music gets involved. They fear that, with such high quality copies available, one person can buy a CD and the next 50,000 will make illegal copies of it. They have even expressed their fears to House and Senate subcommittees. I understand they have the support a certain Mr. Reagan who lives somewhere in that area too, and

I hear he can be quite influential.

So how does this affect us? Well, the initial idea to prevent such copying (never mind that it's illegal, the Government apparently views us all as crooks) was to permit only analog output (like conventional tape decks), so that successive overdubs would lose signal quality during repeated translations from analog to digital. After realizing that this only forces a one-time loss of signal when copying a CD to a tape, not enough to seriously hurt the sound but enough to frustrate musicians everywhere, a new scheme is being adopted. This time they propose a frequency-sensing circuit aimed at 3.8 kHz, somewhere in the middle of the range of most instruments and voices. All CD's would be manufactured with a deep notch in the frequencies at that range. If a DAT recorder sensed it was recording a source with no frequencies at 3.8 kHz, it would promptly shut off. Slick, huh? Now every CD sold will have funny phase shifting and other similarly nasty effects as sounds pass through that lucky frequency. If you play a high, solo synthesizer riff or bass part through your computer's midi ports, you'd best limit it to 15 seconds. CBS is the first label to support this nonsense. According to the September issue of Electronic Musician,

Continued on page 10

CRT TIPS: AVOID EYE & MUSCLE STRAIN

This is a reprint article from Sept. 1986 by the Piedmont Triad Atari Users Group.
It is on a talk given by Julia Lacey of CRT Services, Inc., Winston Salem, NC

Here are some hints to make you more comfortable while using your computer;

Place your monitor at **EYE LEVEL**. This will stop the pulling of muscles in your neck. Your head weighs 10-15 pounds.

The more forward your head is pitched, the more the muscles are used at the back of your neck to hold up your head. Ms Lacey sometimes brings a bowling ball to her talks to demonstrate the weight of the head!

Place any printed material you may be working with at the same distance from your eyes as the monitor, whenever possible, to avoid constant changes in focus. She recommends a working distance of 25 inches or more from your monitor, depending on the size and what feels comfortable.

Sit **UPRIGHT!** This will keep back muscles rested. Poor posture causes the internal organs to move into places where they cannot function well. A good posture chair is well worth the money because you only get one skeleton. If you use a conventional chair, the seat should be low enough so that there is no pressure on the bottom of your thighs above the knees, from the weight of your legs. There should be room for three fingers between the back of your knee & the front edge of the chair. Adjust the height of your chair or keyboard so that your elbows are at your sides - not extended out in front of you.

Place the monitor so that the line of sight is **PARALLEL** to the window, if possible, i.e. window to the side of you. The worst possible position is to sit facing the window, which causes your eyes to continually compensate for the difference between the

brightness of the window and the monitor. The second worst arrangement is to have the window behind you, reflecting in the monitor screen. This goes for bright lamps as well. Fluorescent light are **AWFUL**, in Ms. Lacey's opinion. She is concerned with the 60 Hz flicker inherent in these lights, which, when combined with the cyclic flicker of a monitor, can and does cause distress among CRT users. She recommends no overhead fluorescent lighting (Ed..In my lab at Penn DOT, we have an entire bank of ceiling lights knocked out because of the glare on the CRT's). Turn the brightness of the monitor **DOWN** as far as possible, so that the light feels "soft" on your eyes, but not so far down that you are straining to read for lack of light. (Ed.. this will also prolong the life of your monitor screen).

CRT Services sells an extremely fine nylon micro-mesh cloth filter which fits absolutely flush with the glass surface of your monitor, behind the front bezel or case and not over it. Ms Lacey feels strongly that anti-glare screens that fit over the monitor frame (above the surface of the screen) are not helpful and only increase the fuzziness of the picture. Also, your eye is confused by two surfaces. Several of us noticed an obvious difference in the sharpness of text viewed on an ordinary Sony color TV, even from across the room, when one of the filter screens was held to the surface.

These screens cost \$49 for a monochrome monitor and \$53 for color and they come in all sizes.

Incidentally, Ms Lacey does not like color monitors. In her experience, which includes

talking to thousands of people who use monitors 6 to 8 hours a day, she says that inevitably those using color monitors report the most eyestrain, headaches, changes of prescriptions for eyeglasses, and the like. The reason, she thinks, is that the pixels are composed of an array of different color phosphor dots, which limits resolution and confuses the eye. (Ed..obviously she has not seen the ST color monitor). With regard to monochrome monitors, she told the group that research shows black & white to be the easiest on the eyes. Otherwise, green and amber are about equally popular but to her knowledge, neither has been scientifically proved to be superior to the other.

Ms Lacey is engaged in something of a crusade to improve conditions for those using computer workstations. She is trying to get appropriate federal agencies to set standards for workplace conditions to insure safe use of CRT's, and she will be testifying before Congress on the subject.

Ms Lacey is very interested in providing further information to any group with an interest in the subject and urges you to call or write to CRT Services. She has written a 50+ page pamphlet which will be available in October.

The address is:

CRT Services, Inc.
Julia Lacey, V.P.
5021 Mereworth Court
Winston-Salem NC 27104
(919) 765-0144



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PRESIDENT'S PRINTOUT

By Steve Marshall, NWPAC



Well, the end of the year is approaching and I've been thinking about the club - where it's been and where it's going. In some ways it's been a good year for NWPAC. I think we have handled the problem of satisfying the interests of the 8-bit and ST people fairly well. I think that, for the most part, the monthly meetings have been interesting, informative and well attended.

The disk libraries have grown, as has the periodical library. And our monthly newsletter has a very professional look. All of these are positive things for the club.

But there have been some disappointing things develop this year as well. First, our financial picture is not very healthy at this point. We have had a number of expenses in the past six months, all necessary, but which have drained our treasury to the point where we are barely able to meet our obligations.

Part of the problem has been our declining membership. I think we have an excellent club with many benefits to the membership, but we find that the growth we have experienced the past four years has halted and we have leveled off at about 150 members.

Another problem is that many members fail to renew their memberships. If your membership has expired recently, please make a point of renewing right away. We need your support.

While 1987 was a crucial year for the club in terms of bringing together the 8-bit owners and

the ST owners, 1988 may well be a crucial year for NWPAC in other ways. Whether the answer is fund raising activities, more publicity or simple belt-tightening, our financial picture must be improved if we are to continue to provide the kinds of benefits our members want. If you have suggestions, or are willing to help the club by volunteering your time, let me know.

The focus of November's meeting is "Utilities". What is a utility? (No, we're not talking about APS or SRP.) A utility program is a useful computer program that makes using your computer easier, more enjoyable, or even allows you to do things beyond the normal capabilities of your system. For instance, RAM disks are a very common utility and practically a necessity on a one drive system. Other utilities include backup utilities, formatting and DOS utilities, disk utilities that allow you to edit sectors or "undelete" lost files, etc. The nice thing about utility programs is that they are usually inexpensive or even public domain. This is a meeting that everyone, from old-timers to the beginner, 8-bit and ST, will enjoy. Please bring your favorite utility programs to share in our roundtable discussion.

See you on Saturday, November 14th, at 10am.

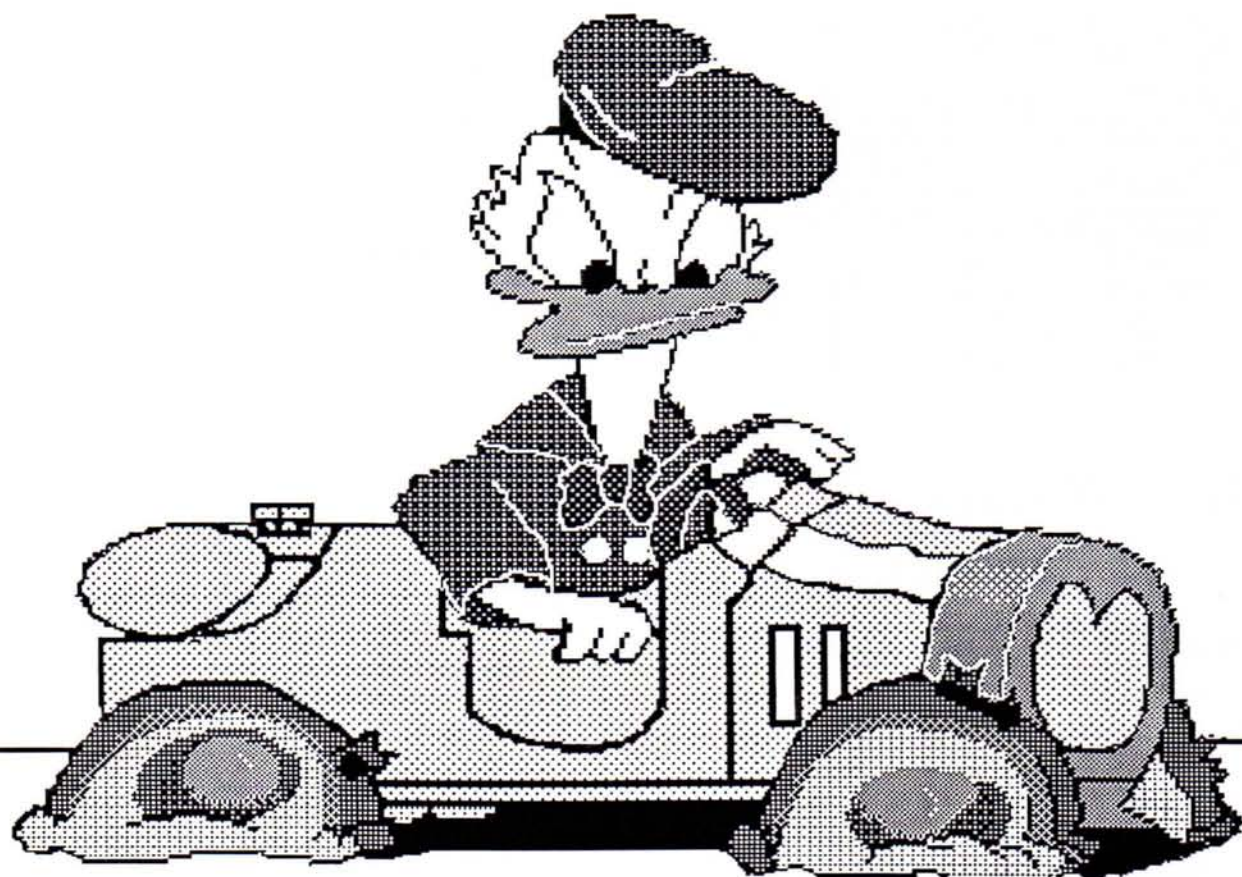
RANDOM BITS

Continued from page 7

they will start notching frequencies by August of this year (there's that funny time warp again). What can you do? Write CBS, write your congressman, or help support a group called Home Recording Rights Coalition. The HRRC will tell you who else you can lean on, if you want to hear your music as the musician dreamed it. HRCC can be reached at P.O. Box 33576, 1145 19th St. NW, Washington, DC 20033 (or call 800-282-TAPE). CBS Records is at 51 West 52nd St., New York, NY 10019 (212-975-8616). Let them know your bits are ruffled! P.S., you might reflect on how VHS recorders and videotape rentals have caused a dramatic boost in movie sales, especially those at the box office. Also, a similar problem plagued the audio cassette industry. At one point, a hefty surcharge was to be added to the cost of blank cassettes (and later videotapes) with the proceeds split proportionately according to royalty payments given recording artists. This could also be applied to DAT tapes, meaning that for every blank tape you buy, Michael Jackson will benefit. No Thanks! In Europe, a movement was made to record an album on one side of a tape, and leave the other side blank, and quit selling completely blank tapes. Unless pre-recorded tapes are brought up to the quality you can make at home, this is also a neat way to force us into bad sound in the name of politics....



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PROGRAMMING MUSIC ON THE ST

By David Lindsley, NWPAC

This is a short example of creating a little music on your ST using either C or Personal Pascal. This plays a short "UMP PA PA" type of music using all three voices available. I used Megamax C for the C version and have no idea if it is compatible with other C implementations. For an example in ST BASIC, refer to my article which appeared in the May 1987 issue of ANALOG. Note: If the sound is fuzzy when you play this, run it again, but press any key on the keyboard prior to running in order to clear up the tones. However, don't touch the keyboard while it's playing or it will wipe out one of the voices.

Abacus puts out a book called Graphics & Sound which gives more examples of sound generation including using the waveform generator. Also, G.I.S.T. from ANTIC is an excellent utility for creating sounds and noises.

```
/* SOUND DEMO */
```

```
#include <osbind.h>
```

```
#define DELAY for(x=0;x<15000;x++);
```

```
int volume, note, x, i, j, channel[3];
int ump[] = {477,477,477,477,477,477,637,637,637,637,
637,637};
int pa1[] = { 0, 0,379, 0,379, 0, 0, 0,379, 0,379, 0};
int pa2[] = { 0, 0,318, 0,318, 0, 0, 0,318, 0,318, 0};
```

```
main()
```

```
{
    sound_init();
    for (j=0; j<4;j++)
        for (i=0; i<12;i++) {
            sound(0, ump[i], 14);
            sound(1, pa1[i], 14);
            sound(2, pa2[i], 14);
            DELAY
            DELAY
        }
    sound_off();
}
```

```
sound_init()
```

```
{
    int port_state;

    port_state = Giaccess(port_state, 7 + 0);
    Giaccess(port_state & (~ 7), 7 + 128);
}
```

```
sound ( ch, pitch, vol )
```

```
int ch, pitch, vol;
{
    Giaccess( vol, 8 + ch + 128 );
    Giaccess( pitch & 0xFF, 0 + ch * 2 + 128);
    Giaccess((pitch >> 8), 1 + ch * 2 + 128);
}
```

```
sound_off()
```

```
{
    int port_state;

    sound (0,0,0);
    sound (1,0,0);
    sound (2,0,0);
    port_state = Giaccess(0, 7 + 0);
    Giaccess(port_state|7, 7 + 128 );
}
```

```
{ SOUND DEMO }
PROGRAM sounddemo;
```

```
VAR
```

```
volume, note, x, i, j : INTEGER;
channel : ARRAY[0..3] OF INTEGER;
ump : ARRAY[1..12] OF INTEGER;
pa1 : ARRAY[1..12] OF INTEGER;
pa2 : ARRAY[1..12] OF INTEGER;
```

```
FUNCTION gia_read(data, register : INTEGER) :
INTEGER;
```

```
XBIOS( 28 );
```

```
PROCEDURE gia_write(data, register : INTEGER) ;
XBIOS( 28 );
```

```
PROCEDURE sound_init;
```

```
VAR port_state : INTEGER;
```

```
BEGIN
```

```
port_state := gia_read(port_state, 7 + 0 );
```

```
gia_write(port_state & (~ 7), 7 + 128);
```

```
END;
```

```
PROCEDURE sound ( ch, pitch, vol: INTEGER );
```

```
BEGIN
```

```
gia_write( vol, 8 + ch + 128 );
```

```
gia_write( pitch & $FF, 0 + ch * 2 + 128);
```

```
gia_write(Shr(pitch,8), 1 + ch * 2 + 128);
```

```
END;
```

```
PROCEDURE sound_off;
```

```
VAR port_state : INTEGER;
```

```
BEGIN
```

```
sound (0,0,0);
```

```
sound (1,0,0);
```

```
sound (2,0,0);
```

```
port_state := gia_read(0, 7 + 0);
```

```
gia_write(port_state| 7, 7 + 128 );
```

```
END;
```

```
PROCEDURE notes;
```

```
BEGIN
```

```
ump[1]:= 477; ump[2]:=477; ump[3]:= 477; ump[4]:=477;
```

```
ump[5]:= 477; ump[6]:=477; ump[7]:= 637; ump[8]:=637;
```

```
ump[9]:= 637; ump[10]:=637; ump[11]:= 637; ump[12]:=637;
```

```
pa1[1]:= 0; pa1[2]:=0; pa1[3]:= 379; pa1[4]:=0;
```

```
pa1[5]:= 379; pa1[6]:=0; pa1[7]:= 0; pa1[8]:=0;
```

```
pa1[9]:= 379; pa1[10]:=0; pa1[11]:= 379; pa1[12]:=0;
```

```
pa2[1]:= 0; pa2[2]:=0; pa2[3]:= 318; pa2[4]:=0;
```

```
pa2[5]:= 318; pa2[6]:=0; pa2[7]:= 0; pa2[8]:=0;
```

```
pa2[9]:= 318; pa2[10]:=0; pa2[11]:= 318; pa2[12]:=0;
```

```
END;
```

```
BEGIN
```

```
sound_init;
```

```
notes;
```

```
FOR j := 0 TO 3 DO
```

```
FOR i := 1 TO 12 DO
```

```
BEGIN
```

```
sound(0, ump[i], 14);
```

```
sound(1, pa1[i], 14);
```

```
sound(2, pa2[i], 14);
```

```
FOR x := 0 TO 15000 DO;
```

```
FOR x := 0 TO 15000 DO;
```

```
END;
```

```
sound_off;
```

```
END.
```


HUMILITY AND THE COMPUTER USER

Reprinted from the April 1986 CURRENT NOTES,
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One lesson many of us learned back in the early 1960's was that humility was a prerequisite for successful programming when using the machines of the time. This lesson seems just as valid today, although in more subtle forms. I have recently been reminded of this in trying to help a couple of people who were new to computers.

Humility in computing means the user adopting a mind set in which the user assumes the responsibility for any mistakes that crop up rather than blaming the machine. Too many people expect the machine to do what they want it to do rather than what they just told it to do.

While today's systems are much more approachable than the early ones, they have still not been trained to read the human mind. Their linguistic abilities are, in fact, somewhere below the level of the ape who reads sign language and it is this limitation that forces the user to put on the cloak of humility.

Unfortunately, computers cannot be punished, as dogs or small children can. Nor are they innately anxious to please. They also have no concept of reward. Indeed, it seems that computers tame users rather than the other way around.

The user must submit to the discipline of learning which keystrokes, joystick movements, mouse tracks, or button pushes cause the computer to do what the user wants done. I claim that submission to this discipline is an act of humility on the same order as that practiced by a monk or nun.

That such a discipline existed was pretty obvious back in the

days when we punched tiny holes in pieces of cardboard in order to feed long strings of instructions to a computer. It was worth it to spend 10 minutes or so to list the program (or the data) and check for misspellings, syntax errors, and the like. The computer, after all, was going to take 45 minutes or so to tell us what it didn't like.

Nowadays our syntax errors are spit back in our faces almost immediately. The diagnostic messages from our errors may be obscure, but they are trying to tell us something - if we would only take the time and trouble to try to understand them. We have to humbly accept the fact that we made a mistake and attempt to correct it.

Our logic errors, however, quietly propagate through our spreadsheets to pop up innocently as wrong numbers on our tax returns. All of us are familiar with the idea of "Garbage in, Garbage out", but we must be humble enough to recognize that we ourselves put the garbage in in the first place and that it is up to us to remove it. Therefore, the lessons of computer humility are these;

- (1) read the manual,
- (2) analyze what you are doing,
- (3) do what you are supposed to do,
- (4) correct the mistakes the computer has found,
- (5) treat your results as garbage until you are sure they are gold, and
- (6) remember that "Pride goeth before the fall."



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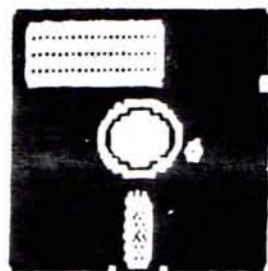
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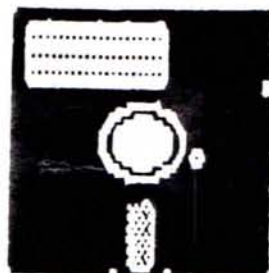
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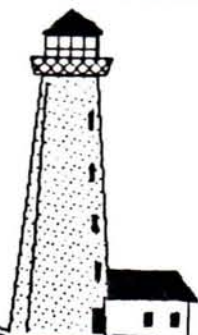
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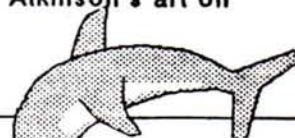
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